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<223> G185

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<213> Arabidopsis thaliana

<223> G185

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35 40 45

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Asp Gln Val Ser Gln Gly Gly Gly Ser Pro Lys Ser Asp Asp Ser Asp  
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Ile	Gln	Val	Asp	Pro	Arg	Ile	Asp	Asp	His	Asn	Asn	Asn	Ile	Lys	Ile	
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Asn	Tyr	Asp	Ser	Ser	His	Asn	Gln	Ile	Glu	Ala	Glu	Gln	Pro	Ser	Ser	
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Asn	Asp	Asn	Gln	Asp	Asp	Gly	Arg	Ile	His	Asp	Lys	Met	Lys	Arg		
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Lys	Ala	Tyr	Val	Gln	Gln	Leu	Glu	Glu	Ser	Arg	Leu	Lys	Leu	Ser	Gln	
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                   20                  25                  30  
 Leu Glu Pro Asp Leu Lys Leu Gln Leu Ser Asn Gln Leu Gly Leu Pro  
                   35                  40                  45  
 Gln Arg Gln Val Ala Val Trp Phe Gln Asn Lys Arg Ala Arg Phe Lys  
                   50                  55                  60  
 Thr Gln Ser Leu Glu Val Gln His Cys Thr Leu Gln Ser Lys His Glu  
                   65                  70                  75                  80  
 Ala Ala Leu Ser Asp Lys Ala Lys Leu Glu His Gln Val Gln Phe Leu  
                   85                  90                  95  
 Gln Asp Glu Leu Lys Arg Ala Arg Asn Gln Leu Ala Leu Phe Thr Asn  
                   100                  105                  110  
 Gln Asp Ser Pro Val Asp Asn Ser Asn Leu Gly Ser Cys Asp Glu Asp  
                   115                  120                  125  
 His Asp Asp Gln Val Val Val Phe Asp Glu Leu Tyr Ala Cys Phe Val  
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Lys Ala Ser Lys Lys Arg Ser Asn Lys Arg Ser Asp Phe Phe Asp Leu
                35             40             45
Asp Asp Asp Phe Glu Ala Asp Phe Gln Gly Phe Lys Asp Asp Ser Ala
                50             55             60
Phe Asp Cys Glu Asp Asp Asp Val Phe Val Asn Val Lys Pro Phe
                65             70             75             80
Val Phe Thr Ala Thr Thr Lys Pro Val Ala Ser Ala Phe Val Ser Thr
                85             90             95
Val Gly Ser Ala Tyr Ala Lys Lys Thr Val Glu Ser Ala Glu Gln Ala
                100            105            110
Glu Lys Ser Ser Lys Arg Lys Arg Lys Asn Gln Tyr Arg Gly Ile Arg
                115            120            125
Gln Arg Pro Trp Gly Lys Trp Ala Ala Glu Ile Arg Asp Pro Arg Lys
                130            135            140

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00537020 022200



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Arg Gln Arg Asp Leu Ile Asp Glu Arg Lys Arg Lys Arg Lys Gln Ser
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Asp Asp Leu Thr Ala Gln Val Thr His Leu Arg Lys Glu Asn Ala Gln
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Ile Val Ala Gly Ile Ala Val Thr Thr Gln His Tyr Val Thr Ile Glu
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Leu Gln Ser Leu Asn Glu Ile Val Asp Phe Val Glu Ser Ser Ser Ser
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Gly Phe Gly Met Glu Thr Gly Gln Gly Leu Phe Asp Gly Gly Leu Phe
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 Arg Glu Ala Arg Tyr Ala Phe Gln Thr Arg Ser Gln Val Asp Ile Leu  
 50 55 60  
 Asp Asp Gly Tyr Arg Trp Arg Lys Tyr Gly Gln Lys Ala Val Lys Asn  
 65 70 75 80  
 Asn Pro Phe Pro Arg Ser Tyr Tyr Lys Cys Thr Glu Glu Gly Cys Arg  
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 Val Lys Lys Gln Val Gln Arg Gln Trp Gly Asp Glu Gly Val Val Val  
 100 105 110  
 Thr Thr Tyr Gln Gly Val His Thr His Ala Val Asp Lys Pro Ser Asp  
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35 40 45

Pro Val Tyr Gly Arg Asn Pro Ser Phe Ser Lys Leu Tyr Pro Cys Phe  
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agtagatgaa	gatggctaac	actgtccgca	ctggcgga	ggggacagta	agaagaaaga		180	
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gagttggagt	caatttcatt	ccgcgcatt	agaagatgaa	catcttttaag	gatgatgtag		300	
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gttggtaccc	caggagaaa	aaattgcaag	acattcttc	tcagat tatic	agccaacttg		420	
gaccagataa	cttggacaac	ctgaggaagc	tagcagagca	attccagaaa	caagctccag		480	
gtgcaggtga	tgtcccgaga	acaatccaag	aagaggacga	tgatgatgat	gtcccgatc		540	
ttgtagtggg	agagacttct	gagacccctc	ctaactgaaga	ggctcccaaa	gctgctgctt		600	
cttaqaqaqa	qaqqaqaqa	aaqqaqaaga	qctcacctac	aaaacccatc	ataaaaatgt		660	





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acagagaaaa tgtgtggcgg tgctattatt tccgattatg cccctctcgt caccaagggc 120
aagggccgta aactcacggc tgaggaactc tggtcagagc tcgatgcttc cgcgcggcac 180
gacttctggg gtttctattc cacctccaaa ctccatccca ccaaccaagt taacgtgaaa 240
gaggaggcag tgaagaagga gcaggcaaca gagccgggga aacggaggaa gaggaagaa 300
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caccatcctc ctctccttaa ttatactcct cgcgcgtcat cgccagatc aaccgatcag 540
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ttcccggtgg agtgatatag atttggaatt ggggacgagt ttccagaacct gagttacgga 660
tttgagccgg attatgatct gaaacagcag atatcgagct tggaaatcgtt ccttgagctg 720
gacggtaaca cggcggagca accgagtcag cttgatgagt ccgtttccga ggtggatatg 780
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agttaaaata agtctgtaat atatatgtaa ccgccgttac ttttaaaagg tttttaccgt 900
cgcatgggac tgcgtgatgt gctcgttggt taatgtgtag aatgtgacca aatggacgtt 960
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<210> 22
<211> 248
<212> PRT
<213> Arabidopsis thaliana

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<220>
<223> G19

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<400> 22
Met Cys Gly Gly Ala Ile Ile Ser Asp Tyr Ala Pro Leu Val Thr Lys
  1             5             10             15

Ala Lys Gly Arg Lys Leu Thr Ala Glu Glu Leu Trp Ser Glu Leu Asp
          20             25             30

Ala Ser Ala Ala Asp Asp Phe Trp Gly Phe Tyr Ser Thr Ser Lys Leu
          35             40             45

His Pro Thr Asn Gln Val Asn Val Lys Glu Glu Ala Val Lys Lys Glu
          50             55             60

Gln Ala Thr Glu Pro Gly Lys Arg Arg Lys Arg Lys Asn Val Tyr Arg
          65             70             75             80

Gly Ile Arg Lys Arg Pro Trp Gly Lys Trp Ala Ala Glu Ile Arg Asp
          85             90             95

Pro Arg Lys Gly Val Arg Val Trp Leu Gly Thr Phe Asn Thr Ala Glu
          100            105            110

Glu Ala Ala Met Ala Tyr Asp Val Ala Ala Lys Gln Ile Arg Gly Asp
          115            120            125

Lys Ala Lys Leu Asn Phe Pro Asp Leu His His Pro Pro Pro Asn
          130            135            140

Tyr Thr Pro Pro Pro Ser Ser Pro Arg Ser Thr Asp Gln Pro Pro Ala
          145            150            155            160

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0057020103200

<400> 24  
Met Glu Val Thr Ser Gln Ser Thr Leu Pro Pro Gly Phe Arg Phe His  
1 5 10 15

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<211> 1121
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G263

<400> 25
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cgccggcgca aagatcagtt ccggcgccgt ttttaagcaa aacgtatcag ctagtgtgatg 120
atcatagcac agacgacgtc gtttcatgga acgaagaagg aacagctttt gtcgtgtgga 180
aaacagcgaga gtttgctaaa gatcttcttc ctcaataact caagcataat aattttctaa 240
gtctcattcg tcagctcaac acttacggat ttcgtaaaac tgtacccgat aaatggggaat 300
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atcctggttc ggtggagaac atggttgctg atttatcagg agagaacgag aagctttaaac 540
gtgaaaacaa taacttgagc tcggagctcg ccggcgcgaa gaagcagcgc gatgagctag 600
tgacgttctt gacgggtcat ctgaaagtaa gaccggaaca aatcgataaa atgatcaaaag 660
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aaaaaaagag tagaagactg ttcaaacacg cgtgtgacac gtcacgcacg acgacgaaaa 960
aaatgattta aaaaactatt tttttccgta aggaagaaaa gttattttta tgttttaaaa 1020
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aatttaatta gtgtattaag aaaataaaac aaaaaaaaaa a 1121

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<210> 26  
 <211> 284  
 <212> PRT  
 <213> *Arabidopsis thaliana*

<220>  
 <223> G263

<400> 26  
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 Ser Lys Thr Tyr Gln Leu Val Asp Asp His Ser Thr Asp Asp Val Val  
 20 25 30  
 Ser Trp Asn Glu Glu Gly Thr Ala Phe Val Val Trp Lys Thr Ala Glu  
 35 40 45  
 Phe Ala Lys Asp Leu Leu Pro Gln Tyr Phe Lys His Asn Asn Phe Ser  
 50 55 60  
 Ser Phe Ile Arg Gln Leu Asn Thr Tyr Gly Phe Arg Lys Thr Val Pro  
 65 70 75 80  
 Asp Lys Trp Glu Phe Ala Asn Asp Tyr Phe Arg Arg Gly Gly Glu Asp  
 85 90 95  
 Leu Leu Thr Asp Ile Arg Arg Arg Lys Ser Val Ile Ala Ser Thr Ala  
 100 105 110  
 Gly Lys Cys Val Val Val Gly Ser Pro Ser Glu Ser Asn Ser Gly Gly  
 115 120 125  
 Gly Asp Asp His Gly Ser Ser Thr Ser Ser Pro Gly Ser Ser Lys  
 130 135 140

0057020-03200

Asn Pro Gly Ser Val Glu Asn Met Val Ala Asp Leu Ser Gly Glu Asn  
145 150 155 160

Glu Lys Leu Lys Arg Glu Asn Asn Asn Leu Ser Ser Glu Leu Ala Ala  
165 170 175

Ala Lys Lys Gln Arg Asp Glu Leu Val Thr Phe Leu Thr Gly His Leu  
180 185 190

Lys Val Arg Pro Glu Gln Ile Asp Lys Met Ile Lys Gly Gly Lys Phe  
195 200 205

Lys Pro Val Glu Ser Asp Glu Glu Ser Glu Cys Glu Gly Cys Asp Gly  
210 215 220

Gly Gly Gly Ala Glu Glu Gly Val Gly Glu Gly Leu Lys Leu Phe Gly  
225 230 235 240

Val Trp Leu Lys Gly Glu Arg Lys Lys Arg Asp Arg Asp Glu Lys Asn  
245 250 255

Tyr Val Val Ser Gly Ser Arg Met Thr Glu Ile Lys Asn Val Asp Phe  
260 265 270

His Ala Pro Leu Trp Lys Ser Ser Lys Val Cys Asn  
275 280

<210> 27

<211> 1130

<212> DNA

<213> Arabidopsis thaliana

<220>

<223> G291

<220>

<223> "n" bases at various positions throughout the  
sequence may be A, T, C, G, other or unknown

<400> 27

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tcagtactca tcctcttttg tgcatacttc attagatctc actattggcg ttactcgtat 180
gcgagtgtaa gaagatccac cgacaagtgc tttggtggaa gaattaaacc gagttagtcg 240
tgagaacaag aagctctcgg agatgctaac tttgatgtgt gacaactaca acgtcttgag 300
gaagcaactt atggaatatg ttaacaagag caacataacc gagagggatc aaatcagccc 360
tcccaagaaa cgcaaatccc cggcgagaga ggacgcattc agctgcgcgg ttattggcgg 420
agtgtcggga agtagctcaa cggatcaaga tgagtatttg tgaagaagc agagagaaga 480
gactgtcgtg aaggagaaag tctcaagggt ctattacaag accgaagctt ctgacactac 540
cctcgtttgt aaagatgggt atcaatggag gaaatatgga cagaaagtga ctagagacaa 600
tccatctcca agagcttact tcaaatgtgc ttgtgctcca agctgttctg tcaaaaagaa 660
ggttcagaga agtgtggagg atcagtcctg gttagtgcga acttatgagg gtgaacacaa 720
ccatccaatg ccatcgcaga tcgattcaaa caatggctta aaccgccaca tctctcatgg 780
tggttcagct tcaacaccgg ttgcagcaaa cagaagaagt agcttgactg tgccgggtgac 840
taccgtagat atgattgaat cgaagaaagt gacgagccca acgtcaagaa tcgattttcc 900
ccaagtccag aaacttttgg tggagcaaat ggcttcttcc ttaaccaaa atcctaactt 960
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<210> 28
<211> 302
<212> PRT
<213> Arabidopsis thaliana

<220>
<223> G291
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Ile	Gly	Val	Thr	Arg	Met	Arg	Val	Glu	Glu	Asp	Pro	Pro	Thr	Ser	Ala	
			20					25						30		
Leu	Val	Glu	Leu	Asn	Arg	Val	Ser	Ala	Glu	Asn	Lys	Lys	Leu	Ser		
		35				40					45					
Glu	Met	Leu	Thr	Leu	Met	Cys	Asp	Asn	Tyr	Asn	Val	Leu	Arg	Lys	Gln	
	50					55					60					
Leu	Met	Glu	Tyr	Val	Asn	Lys	Ser	Asn	Ile	Thr	Glu	Arg	Asp	Gln	Ile	
	65				70					75				80		
Ser	Pro	Pro	Lys	Lys	Arg	Lys	Ser	Pro	Ala	Arg	Glu	Asp	Ala	Phe	Ser	
			85						90					95		
Cys	Ala	Val	Ile	Gly	Gly	Val	Ser	Glu	Ser	Ser	Ser	Thr	Asp	Gln	Asp	
			100					105					110			
Glu	Tyr	Leu	Cys	Lys	Lys	Gln	Arg	Glu	Glu	Thr	Val	Val	Lys	Glu	Lys	
		115					120					125				
Val	Ser	Arg	Val	Tyr	Tyr	Lys	Thr	Glu	Ala	Ser	Asp	Thr	Thr	Leu	Val	
		130				135					140					
Val	Lys	Asp	Gly	Tyr	Gln	Trp	Arg	Lys	Tyr	Gly	Gln	Lys	Val	Thr	Arg	
	145				150					155				160		
Asp	Asn	Pro	Ser	Pro	Arg	Ala	Tyr	Phe	Lys	Cys	Ala	Cys	Ala	Pro	Ser	
				165					170					175		
Cys	Ser	Val	Lys	Lys	Lys	Val	Gln	Arg	Ser	Val	Glu	Asp	Gln	Ser	Val	
		180						185					190			
Leu	Val	Ala	Thr	Tyr	Glu	Gly	Glu	His	Asn	His	Pro	Met	Pro	Ser	Gln	
		195					200					205				
Ile	Asp	Ser	Asn	Asn	Gly	Leu	Asn	Arg	His	Ile	Ser	His	Gly	Gly	Ser	
	210					215					220					
Ala	Ser	Thr	Pro	Val	Ala	Ala	Asn	Arg	Arg	Ser	Ser	Leu	Thr	Val	Pro	
	225				230					235				240		

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<400> 30
Met Asn Asp Ala Asp Thr Asn Leu Gly Ser Phe Ser Asp Asp Thr
  1          5          10          15
His Ser Val Phe Glu Phe Pro Glu Leu Asp Leu Ser Asp Glu Trp Met
          20          25          30
Asp Asp Asp Leu Val Ser Ala Val Ser Gly Met Asn Gln Ser Tyr Gly
          35          40          45
Tyr Gln Thr Ser Asp Val Ala Gly Ala Leu Phe Ser Gly Ser Ser Ser
  50          55          60

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Thr Thr Tyr Glu Gly Ser His Asn His Ser Ser Met Asn  
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<210> 32
<211> 305
<212> PRT
<213> Arabidopsis thaliana
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**<220>**

<400> 32

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35 40 45

Cys Asn Gln Leu Ser Pro Gln Val Glu His Arg Pro Phe Ser Ala Glu  
50 55 60

Glu Asp Glu Thr Ile Ala Arg Ala His Ala Gln Phe Gly Asn Lys Trp  
65 70 75 80

Ala Thr Ile Ala Arg Leu Leu Asn Gly Arg Thr Asp Asn Ala Val Lys  
85 90 95

Asn His Trp Asn Ser Thr Leu Lys Arg Lys Cys Gly Gly Tyr Asp His  
100 105 110

Arg Gly Tyr Asp Gly Ser Glu Asp His Arg Pro Val Lys Arg Ser Val  
115 120 125

Ser Ala Gly Ser Pro Pro Val Val Thr Gly Leu Tyr Met Ser Pro Gly  
130 135 140

Ser Pro Thr Gly Ser Asp Val Ser Asp Ser Ser Thr Ile Pro Ile Leu  
145 150 155 160

Pro Ser Val Glu Leu Phe Lys Pro Val Pro Arg Pro Gly Ala Val Val  
165 170 175

Leu Pro Leu Pro Ile Glu Thr Ser Ser Phe Ser Asp Asp Pro Pro Thr  
180 185 190

Ser Leu Ser Leu Ser Leu Pro Gly Ala Asp Val Ser Glu Glu Ser Asn  
195 200 205

Arg Ser His Glu Ser Thr Asn Ile Asn Asn Thr Thr Ser Ser Arg His  
210 215 220

Asn His Asn Asn Thr Val Ser Phe Met Pro Phe Ser Gly Gly Phe Arg  
225 230 235 240

Gly Ala Ile Glu Glu Met Gly Lys Ser Phe Pro Gly Asn Gly Gly Glu  
245 250 255

Phe Met Ala Val Val Gln Glu Met Ile Lys Ala Glu Val Arg Ser Tyr  
260 265 270

Met Thr Glu Met Gln Arg Asn Asn Gly Gly Gly Phe Val Gly Gly Phe  
275 280 285



Phe Asp Phe Pro Ala Val Lys Val Glu Pro Thr Glu Asn Phe Thr Ala  
 85 90 95  
 Met Glu Glu Lys Pro Lys Lys Ala Ile Pro Val Thr Glu Thr Ala Val  
 100 105 110  
 Lys Ala Lys His Tyr Arg Gly Val Arg Gln Arg Pro Trp Gly Lys Phe  
 115 120 125  
 Ala Ala Glu Ile Arg Asp Pro Ala Lys Asn Gly Ala Arg Val Trp Leu  
 130 135 140  
 Gly Thr Phe Glu Thr Ala Glu Asp Ala Ala Leu Ala Tyr Asp Ile Ala  
 145 150 155 160  
 Ala Phe Arg Met Arg Gly Ser Arg Ala Leu Leu Asn Phe Pro Leu Arg  
 165 170 175  
 Val Asn Ser Gly Glu Pro Asp Pro Val Arg Ile Thr Ser Lys Arg Ser  
 180 185 190  
 Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Thr Ser Ser Ser Glu Asn  
 195 200 205  
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 gccatttcca accaacgggtc aaaacccgta cctcctctac ggattccaaa gccctacaaa 180  
 caatccacaa tccatgagcc taagcagcaa caactcaaca tcagatgaag cagaagagca 240  
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 tataa 725

00537029 002200

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cgcctccgaa	tgtatagga	gaatgacagg	atcatctcca	acaactctct	cctaattctc	180	
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1				5					10					15		
Asp Glu Glu Leu Val Met His Tyr Leu Cys Arg Lys Cys Ala Ser Gln																
			20					25					30			
Ser	Ile	Ala	Val	Pro	Ile	Ile	Ala	Glu	Ile	Asp	Leu	Tyr	Lys	Tyr	Asp	
		35					40					45				
Pro	Trp	Glu	Leu	Pro	Gly	Leu	Ala	Leu	Tyr	Gly	Glu	Lys	Glu	Trp	Tyr	
		50				55					60					
Phe	Phe	Ser	Pro	Arg	Asp	Arg	Lys	Tyr	Pro	Asn	Gly	Ser	Arg	Pro	Asn	
65					70					75					80	
Arg	Ser	Ala	Gly	Ser	Gly	Tyr	Trp	Lys	Ala	Thr	Gly	Ala	Asp	Lys	Pro	
				85					90					95		
Ile	Gly	Leu	Pro	Lys	Pro	Val	Gly	Ile	Lys	Lys	Ala	Leu	Val	Phe	Tyr	
		100					105						110			
Ala	Gly	Lys	Ala	Pro	Lys	Gly	Glu	Lys	Thr	Asn	Trp	Ile	Met	His	Glu	
		115					120					125				
Tyr	Arg	Leu	Ala	Asp	Val	Asp	Arg	Ser	Val	Arg	Lys	Lys	Lys	Asn	Ser	
		130				135					140					
Leu	Arg	Leu	Asp	Asp	Trp	Val	Leu	Cys	Arg	Ile	Tyr	Asn	Lys	Lys	Gly	
145					150					155					160	



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aaaaaaaaa atcattccaa ggaagagttc ttaattttga tactcgaaaa gagcgtagac 1140
tgactcgaat cagttcatat tttctttggt tcgttttatt tacgacaaaa ttactaaca 1200
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<210> 40
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<212> PRT
<213> Arabidopsis thaliana

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<220>
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Asp Ser Asp Val Arg Lys Gly Pro Trp Thr Glu Glu Glu Asp Ala Ile
      20          25          30
Leu Val Asn Phe Val Ser Ile His Gly Asp Ala Arg Trp Asn His Ile
      35          40          45
Ala Arg Ser Ser Gly Leu Lys Arg Thr Gly Lys Ser Cys Arg Leu Arg
      50          55          60
Trp Leu Asn Tyr Leu Arg Pro Asp Val Arg Arg Gly Asn Ile Thr Leu
      65          70          75
Glu Glu Gln Phe Met Ile Leu Lys Leu His Ser Leu Trp Gly Asn Arg
      85          90          95
Trp Ser Lys Ile Ala Gln Tyr Leu Pro Gly Arg Thr Asp Asn Glu Ile
      100         105         110
Lys Asn Tyr Trp Arg Thr Arg Val Gln Lys Gln Ala Lys His Leu Arg
      115         120         125
Cys Asp Val Asn Ser Asn Leu Phe Lys Glu Thr Met Arg Asn Val Trp
      130         135         140
Met Pro Arg Leu Val Glu Arg Ile Asn Ala Gln Ser Leu Pro Thr Thr
      145         150         155         160
Cys Glu Gln Val Glu Ser Met Ile Thr Asp Pro Ser Gln Pro Val Asn
      165         170         175
Glu Pro Ser Pro Val Glu Pro Gly Phe Val Gln Phe Ser Gln Asn His
      180         185         190
His Gln Gln Phe Val Pro Ala Thr Glu Leu Ser Ala Thr Ser Ser Asn
      195         200         205
Ser Pro Ala Glu Thr Phe Ser Asp Val Arg Gly Gly Val Val Asn Gly
      210         215         220

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00533026-0022200

Trp Phe Leu Gln Asp Gln Phe Cys Pro Asp Thr Thr Ser Tyr Ser Tyr  
260 265 270

Asn

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<220>  
<223> G555

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<220>  
<223> G555



<400> 42  
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 Ser Asp Ser Ser Asp Arg Ser Lys Ser Lys Met Asp Gln Lys Thr Leu  
 35 40 45  
 Arg Arg Leu Ala Gln Asn Arg Glu Ala Ala Arg Lys Ser Arg Leu Arg  
 50 55 60  
 Lys Lys Ala Tyr Val Gln Gln Leu Glu Asn Ser Arg Leu Lys Leu Thr  
 65 70 75 80  
 Gln Leu Glu Gln Glu Leu Gln Arg Ala Arg Gln Gln Gly Val Phe Ile  
 85 90 95  
 Ser Ser Ser Gly Asp Gln Ala His Ser Thr Ala Gly Asp Gly Ala Met  
 100 105 110  
 Ala Phe Asp Val Glu Tyr Arg Arg Trp Gln Glu Asp Lys Asn Arg Gln  
 115 120 125  
 Met Lys Glu Leu Ser Ser Ala Ile Asp Ser His Ala Thr Asp Ser Glu  
 130 135 140  
 Leu Arg Ile Ile Val Asp Gly Val Ile Ala His Tyr Glu Glu Leu Tyr  
 145 150 155 160  
 Arg Ile Lys Gly Asn Ala Ala Lys Ser Asp Val Phe His Leu Leu Ser  
 165 170 175  
 Gly Met Trp Lys Thr Pro Ala Glu Arg Cys Phe Leu Trp Leu Gly Gly  
 180 185 190  
 Phe Arg Ser Ser Glu Leu Leu Lys Leu Ile Ala Cys Gln Leu Glu Pro  
 195 200 205  
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 210 215 220  
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 225 230 235 240  
 Ser Leu Ala Asp Thr Leu Ser Ser Gly Thr Leu Gly Ser Ser Ser Ser  
 245 250 255  
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 260 265 270  
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 275 280 285  
 Gln Thr Tyr Gln Gln Met Val Arg Leu Leu Thr Thr Arg Gln Ser Ala  
 290 295 300

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Tyr Lys Cys Thr Val Cys Gly Lys Ser Phe Ser Ser Tyr Gln Ala Leu  
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Gly Gly His Lys Thr Ser His Arg Lys Pro Thr Asn Thr Ser Ile Thr  
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Ser Gly Asn Gln Glu Leu Ser Asn Asn Ser His Ser Asn Ser Gly Ser  
130 135 140

Val Val Ile Asn Val Thr Val Asn Thr Gly Asn Gly Val Ser Gln Ser  
145 150 155 160

Gly Lys Ile His Thr Cys Ser Ile Cys Phe Lys Ser Phe Ala Ser Gly  
165 170 175

Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Asp Gly Gly Asn Asn  
180 185 190

Gly Asn Gly Asn Gly Ser Ser Ser Asn Ser Val Glu Leu Val Ala Gly  
195 200 205

Ser Asp Val Ser Asp Val Asp Asn Glu Arg Trp Ser Glu Glu Ser Ala  
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Ser Val Thr Thr Ser  
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<223> G1352

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 35 40 45  
 Ser Ser Ser Ser Pro Pro Arg Ser Arg Pro Lys Ser Gln Asn Gln Asp  
 50 55 60  
 Leu Thr Glu Glu Glu Tyr Leu Ala Leu Cys Leu Leu Met Leu Ala Lys  
 65 70 75 80  
 Asp Gln Pro Ser Gln Thr Arg Phe His Gln Gln Ser Gln Ser Leu Thr  
 85 90 95  
 Pro Pro Pro Glu Ser Lys Asn Leu Pro Tyr Lys Cys Asn Val Cys Glu  
 100 105 110  
 Lys Ala Phe Pro Ser Tyr Gln Ala Leu Gly Gly His Lys Ala Ser His  
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 Arg Ile Lys Pro Pro Thr Val Ile Ser Thr Thr Ala Asp Asp Ser Thr  
 130 135 140  
 Ala Pro Thr Ile Ser Ile Val Ala Gly Glu Lys His Pro Ile Ala Ala  
 145 150 155 160  
 Ser Gly Lys Ile His Glu Cys Ser Ile Cys His Lys Val Phe Pro Thr  
 165 170 175  
 Gly Gln Ala Leu Gly Gly His Lys Arg Cys His Tyr Glu Gly Asn Leu  
 180 185 190  
 Gly Gly Gly Gly Gly Gly Ser Lys Ser Ile Ser His Ser Gly Ser  
 195 200 205  
 Val Ser Ser Thr Val Ser Glu Glu Arg Ser His Arg Gly Phe Ile Asp  
 210 215 220  
 Leu Asn Leu Pro Ala Leu Pro Glu Leu Ser Leu His His Asn Pro Ile  
 225 230 235 240  
 Val Asp Glu Glu Ile Leu Ser Pro Leu Thr Gly Lys Lys Pro Leu Leu  
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Cys	Lys	Glu	Arg	Lys	Gln	Leu	Met	Lys	Asp	Ala	Val	Thr	Ala	Arg	Asn		
				20					25					30			
Ala	Phe	Ala	Ala	Ala	His	Ser	Ala	Tyr	Ala	Met	Ala	Leu	Lys	Asn	Thr		
				35					40					45			
Gly	Ala	Ala	Leu	Ser	Asp	Tyr	Ser	His	Gly	Glu	Phe	Leu	Val	Ser	Asn		
				50					55					60			
His	Ser	Ser	Ser	Ser	Ala	Ala	Ala	Ala	Ile	Ala	Ser	Thr	Ser	Ser	Leu		
				65					70					75			
Pro	Thr	Ala	Ile	Ser	Pro	Pro	Leu	Pro	Ser	Ser	Thr	Ala	Pro	Val	Ser		
				85					90					95			
Asn	Ser	Thr	Ala	Ser	Ser	Ser	Ser	Ala	Ala	Val	Pro	Gln	Pro	Ile	Pro		
				100					105					110			
Asp	Thr	Leu	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Leu	Pro	Leu	Gln	Arg		
				115					120					125			
Ala	Ala	Thr	Met	Pro	Glu	Met	Asn	Gly	Arg	Ser	Gly	Gly	Gly	His	Ala		
				130					135					140			
Gly	Ser	Gly	Leu	Asn	Gly	Ile	Glu	Glu	Asp	Gly	Ala	Leu	Asp	Asn	Asp		
				145					150					155			
Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Ser	Glu	Met	Glu	Asn	Arg	Asp		
				165					170					175			
Arg	Leu	Ile	Arg	Lys	Ser	Arg	Ser	Arg	Gly	Gly	Ser	Thr	Arg	Gly	Asn		
				180					185					190			
Arg	Thr	Thr	Ile	Glu	Asp	His	His	Leu	Gln	Glu	Glu	Lys	Ala	Pro	Pro		
				195					200					205			
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Arg	Asp	Met	Gly	Met	Tyr	Glu	Pro	Phe	Gln	Gln	Leu	Ser	Gly	Trp	Glu	
			20					25					30			
Ser	Pro	Phe	Lys	Ser	Asp	Ile	Asn	Asn	Ile	Thr	Ser	Asn	Gln	Asn	Asn	
		35					40					45				
Asn	Gln	Ser	Ser	Ser	Thr	Thr	Leu	Glu	Val	Asp	Ala	Arg	Pro	Glu	Ala	
	50					55					60					
Asp	Asp	Asn	Asn	Arg	Val	Asn	Tyr	Thr	Ser	Val	Tyr	Asn	Asn	Ser	Leu	
65					70					75					80	
Glu	Ala	Glu	Pro	Ser	Ser	Asn	Asn	Asp	Gln	Asp	Glu	Asp	Arg	Ile	Asn	
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<210> 51  
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<212> DNA
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Lys Ser Ile Pro Pro Trp Lys Glu Gln Ile Thr Phe Arg Gly Ile Val  
35 40 45

Ala Ser Leu Ile Ile Gly Ile Ile Tyr Ser Val Ile Val Met Lys Leu  
50 55 60

Asn Leu Thr Thr Gly Leu Val Pro Asn Leu Asn Val Ser Ala Ala Leu  
65 70 75 80

Leu Ala Phe Val Phe Leu Arg Ser Trp Thr Lys Leu Leu Thr Lys Ala  
85 90 95

Gly Ile Val Thr Lys Pro Phe Thr Lys Gln Glu Asn Thr Val Val Gln  
100 105 110

Thr Cys Ala Val Ala Cys Tyr Ser Ile Ala Val Gly Gly Gly Phe Gly  
115 120 125

Ser Tyr Leu Leu Gly Leu Asn Arg Ile Thr Tyr Glu Gln Ser Gly Gly  
130 135 140

Thr His Thr Asp Gly Asn Tyr Pro Glu Gly Thr Lys Glu Pro Gly Ile  
145 150 155 160

Gly Trp Met Thr Ala Phe Leu Phe Phe Thr Cys Phe Val Gly Leu Leu  
165 170 175

Ala Leu Val Pro Leu Arg Lys Ile Met Ile Ile Asp Tyr Lys Leu Thr  
180 185 190

Tyr Pro Ser Gly Thr Ala Thr Ala Val Leu Ile Asn Gly Phe His Thr  
195 200 205

Pro Lys Gly Asn Lys Met Ala Lys Lys Gln Val Phe Gly Phe Val Lys  
210 215 220

Tyr Phe Ser Phe Ser Phe Ile Trp Ala Phe Phe Gln Trp Phe Phe Ser  
225 230 235 240

Gly Gly Thr Glu Cys Gly Phe Ile Gln Phe Pro Thr Phe Gly Leu Glu  
245 250 255

Ala Leu Lys Asn Thr Phe Tyr Phe Asp Phe Ser Met Thr Tyr Val Gly  
260 265 270

Ala Gly Met Ile Cys Pro His Ile Val Asn Ile Ser Leu Leu Phe Gly  
275 280 285

Ala Val Leu Ser Trp Gly Ile Met Trp Pro Leu Ile Lys Gly Leu Lys  
290 295 300

Gly 305	Asp	Trp	Phe	Pro 310	Ser	Thr	Leu	Pro	Glu 315	Asn	Ser	Met	Lys	Ser	Leu 320
Asn	Gly	Tyr	Lys 325	Phe	Ile	Ser	Ile	Ser 330	Leu	Ile	Leu	Gly	Asp 335	Gly	
Leu	Tyr	Gln	Phe 340	Ile	Lys	Ile	Leu	Phe 345	Lys	Thr	Gly	Ile	Asn 350	Met	Tyr
Val	Lys	Leu 355	Asn	Asn	Arg	Asn	Ser 360	Gly	Lys	Ser	Asn	Ser 365	Glu	Lys	Asp
Lys	Gln 370	Ser	Ile	Ala	Asp	Leu 375	Lys	Arg	Asp	Glu 380	Ile	Phe	Val	Arg	Asp
Ser 385	Ile	Pro	Leu	Trp	Val 390	Ala	Ala	Val	Gly	Asn 395	Ala	Ala	Phe	Ser	Val 400
Val	Ser	Ile	Ile	Ala 405	Ile	Pro	Ile	Met	Phe 410	Pro	Glu	Leu	Lys	Trp	Tyr 415
Phe	Ile	Val	Val 420	Ala	Tyr	Met	Leu	Ala 425	Pro	Ser	Leu	Gly	Phe 430	Ser	Asn
Ala	Tyr	Gly 435	Ala	Gly	Leu	Thr	Asp 440	Met	Asn	Met	Ala	Tyr 445	Asn	Tyr	Gly
Lys	Val 450	Ala	Leu	Phe	Ile	Leu 455	Ala	Ala	Met	Ala	Gly 460	Lys	Gln	Asn	Gly
Val 465	Val	Ala	Gly	Leu	Val 470	Gly	Cys	Gly	Leu	Ile 475	Lys	Ser	Ile	Val	Ser 480
Ile	Ser	Ser	Asp 485	Leu	Met	His	Asp	Phe 490	Lys	Thr	Gly	His	Leu 495	Thr	Leu
Thr	Ser	Pro	Arg 500	Ser	Met	Leu	Val	Ser 505	Gln	Ala	Ile	Gly	Thr 510	Ala	Ile
Gly	Cys	Val 515	Val	Ala	Pro	Leu	Thr 520	Phe	Phe	Leu	Phe	Tyr 525	Lys	Ala	Phe
Asp	Val 530	Gly	Asn	Gln	Glu	Gly 535	Glu	Tyr	Lys	Ala	Pro 540	Tyr	Ala	Leu	Val
Tyr 545	Arg	Asn	Met	Ala	Ile 550	Leu	Gly	Val	Glu	Gly 555	Phe	Ser	Ala	Leu	Pro 560
Gln	His	Cys	Leu	Gln 565	Leu	Cys	Tyr	Gly	Phe 570	Phe	Ala	Phe	Ala	Val 575	Ala
Ala	Asn	Leu	Val 580	Arg	Asp	Arg	Leu	Pro 585	Asp	Lys	Ile	Gly	Asn 590	Trp	Val
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cttcaaagacc	cttaccgtta	taaggaggtc	actcaggttg	cgaagcagga	gcccagaaga	300
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 35 40 45  
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 65 70 75 80  
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 85 90 95  
 Glu Ser Glu Ile Glu Pro Glu Asn Leu Val Pro Glu Glu Trp Arg Asp  
 100 105 110  
 Ile Gln Ala Glu Val Asn Leu Thr Lys Lys Asp Lys Arg Lys Ile Ala  
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00220:0320





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          35          40          45
Cys Gly Lys Ser Cys Arg Leu Arg Trp Ala Asn Tyr Leu Lys Pro Asp
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tgcgtatctt aagttttttt ttgggggcca ttatatatga atgatatgga gatcactgag 1620
agagagagag agctattatg ggtttttttt t 1651

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<210> 60  
 <211> 489  
 <212> PRT  
 <213> Arabidopsis thaliana

<220>  
 <223> G1417

<400> 60  
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 1 5 10 15  
 Gly Glu Phe Leu His Gly Asp Ser Asp Ser Lys Asp His Gln Pro Asn  
 20 25 30  
 Glu Ser Pro Val Glu Arg His His Glu Ser Ser Ile Lys Glu Val Asp  
 35 40 45  
 Phe Phe Ala Ala Lys Ser Gln Pro Phe Asp Leu Gly His Val Arg Thr  
 50 55 60  
 Thr Thr Ile Val Gly Ser Ser Gly Phe Asn Asp Gly Leu Gly Leu Val  
 65 70 75 80  
 Asn Ser Cys His Gly Thr Ser Ser Asn Asp Gly Asp Asp Lys Thr Lys  
 85 90 95

0053020 03200

Thr	Gln	Ile	Ser	Arg	Leu	Lys	Leu	Glu	Leu	Glu	Arg	Leu	His	Glu	Glu
			100					105					110		
Asn	His	Lys	Leu	Lys	His	Leu	Leu	Asp	Glu	Val	Ser	Glu	Ser	Tyr	Asn
		115					120					125			
Asp	Leu	Gln	Arg	Arg	Val	Leu	Leu	Ala	Arg	Gln	Thr	Gln	Val	Glu	Gly
	130					135					140				
Leu	His	His	Lys	Gln	His	Glu	Asp	Val	Pro	Gln	Ala	Gly	Ser	Ser	Gln
	145					150					155				160
Ala	Leu	Glu	Asn	Arg	Arg	Pro	Lys	Asp	Met	Asn	His	Glu	Thr	Pro	Ala
				165					170					175	
Thr	Thr	Leu	Lys	Arg	Arg	Ser	Pro	Asp	Asp	Val	Asp	Gly	Arg	Asp	Met
			180					185					190		
His	Arg	Gly	Ser	Pro	Lys	Thr	Pro	Arg	Ile	Asp	Gln	Asn	Lys	Ser	Thr
	195						200					205			
Asn	His	Glu	Glu	Gln	Gln	Asn	Pro	His	Asp	Gln	Leu	Pro	Tyr	Arg	Lys
	210					215					220				
Ala	Arg	Val	Ser	Val	Arg	Ala	Arg	Ser	Asp	Ala	Thr	Val	Asn	Asp	
	225					230				235				240	
Gly	Cys	Gln	Trp	Arg	Lys	Tyr	Gly	Gln	Lys	Met	Ala	Lys	Gly	Asn	Pro
				245					250					255	
Cys	Pro	Arg	Ala	Tyr	Tyr	Arg	Cys	Thr	Met	Ala	Val	Gly	Cys	Pro	Val
			260					265					270		
Arg	Lys	Gln	Val	Gln	Arg	Cys	Ala	Glu	Asp	Thr	Thr	Ile	Leu	Thr	Thr
		275					280					285			
Thr	Tyr	Glu	Gly	Asn	His	Asn	His	Pro	Leu	Pro	Pro	Ser	Ala	Thr	Ala
	290					295					300				
Met	Ala	Ala	Thr	Thr	Ser	Ala	Ala	Ala	Ala	Met	Leu	Leu	Ser	Gly	Ser
	305					310				315				320	
Ser	Ser	Ser	Asn	Leu	His	Gln	Thr	Leu	Ser	Ser	Pro	Ser	Ala	Thr	Ser
			325						330					335	
Ser	Ser	Ser	Phe	Tyr	His	Asn	Phe	Pro	Tyr	Thr	Ser	Thr	Ile	Ala	Thr
			340					345					350		
Leu	Ser	Ala	Ser	Ala	Pro	Phe	Pro	Thr	Ile	Thr	Leu	Asp	Leu	Thr	Asn
		355					360					365			
Pro	Pro	Arg	Pro	Leu	Gln	Pro	Pro	Pro	Gln	Phe	Leu	Ser	Gln	Tyr	Gly
						375					380				
Pro	Ala	Ala	Phe	Leu	Pro	Asn	Ala	Asn	Gln	Ile	Arg	Ser	Met	Asn	Asn
	385					390				395					400

<220>  
<223> G233



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400> 64
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Asp Gln Leu Val Glu Gly Tyr Glu Phe Ala Thr Gln Leu Gln Leu Leu
20 25 30
Leu Ser His Gln His Ser Asn Gln Tyr His Ile Asp Glu Thr Arg Leu
35 40 45
Val Ser Gly Ser Gly Ser Val Ser Gly Gly Pro Asp 60 Pro Val Asp Glu
50 55 60
Leu Met Ser Lys Ile Leu Gly Ser Phe His Lys Thr Ile Ser Val Leu
65 70 75 80
Asp Ser Phe Asp Pro Val Ala Val Ser Val Pro Ile Ala Val Glu Gly
85 90 95

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<213> Arabidopsis thaliana

<220>
<223> G867

<400> 65
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<210> 66
<211> 344
<212> PRT
<213> Arabidopsis thaliana
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Leu Tyr Arg Met Gly Ser Gly Ser Ser Val Val Leu Asp Ser Glu Asn  
35 40 45

Gly Val Glu Ala Glu Ser Arg Lys Leu Pro Ser Ser Lys Tyr Lys Gly  
50 55 60

Val Val Pro Gln Pro Asn Gly Arg Trp Gly Ala Gln Ile Tyr Glu Lys  
65 70 75 80

His Gln Arg Val Trp Leu Gly Thr Phe Asn Glu Glu Asp Glu Ala Ala  
85 90 95

Arg Ala Tyr Asp Val Ala Val His Arg Phe Arg Arg Arg Asp Ala Val  
100 105 110

Thr Asn Phe Lys Asp Val Lys Met Asp Glu Asp Glu Val Asp Phe Leu  
115 120 125

Asn Ser His Ser Lys Ser Glu Ile Val Asp Met Leu Arg Lys His Thr  
 130 135 140  
 Tyr Asn Glu Glu Leu Glu Gln Ser Lys Arg Arg Arg Asn Gly Asn Gly  
 145 150 155 160  
 Asn Met Thr Arg Thr Leu Leu Thr Ser Gly Leu Ser Asn Asp Gly Val  
 165 170 175  
 Ser Thr Thr Gly Phe Arg Ser Ala Glu Ala Leu Phe Glu Lys Ala Val  
 180 185 190  
 Thr Pro Ser Asp Val Gly Lys Leu Asn Arg Leu Val Ile Pro Lys His  
 195 200 205  
 His Ala Glu Lys His Phe Pro Leu Pro Ser Ser Asn Val Ser Val Lys  
 210 215 220  
 Gly Val Leu Leu Asn Phe Glu Asp Val Asn Gly Lys Val Trp Arg Phe  
 225 230 235 240  
 Arg Tyr Ser Tyr Trp Asn Ser Ser Gln Ser Tyr Val Leu Thr Lys Gly  
 245 250 255  
 Trp Ser Arg Phe Val Lys Glu Lys Asn Leu Arg Ala Gly Asp Val Val  
 260 265 270  
 Ser Phe Ser Arg Ser Asn Gly Gln Asp Gln Gln Leu Tyr Ile Gly Trp  
 275 280 285  
 Lys Ser Arg Ser Gly Ser Asp Leu Asp Ala Gly Arg Val Leu Arg Leu  
 290 295 300  
 Phe Gly Val Asn Ile Ser Pro Glu Ser Ser Arg Asn Asp Val Val Gly  
 305 310 315 320  
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 325 330 335  
 Lys Gln Arg Ile Phe His Ala Ser  
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<210> 67  
 <211> 984  
 <212> DNA  
 <213> Arabidopsis thaliana

<220>  
 <223> G659

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 ccagaagaag acattaaact catctctttc attcaaaagt ttggatcatga gaactggaga 120  
 tctctcccca aacaatctgg tatgtcattg cttttgtcat cacaatcaaa gcaaaagcct 180  
 ctccaattgt tttttctttt ctttatgatt ctgaatgtat atatatgcaa aaatgaaggg 240  
 ctattgaggt gtgggaagag ttgtcgtcta aggtggatta actatcttag gccagatctg 300  
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0055302002000

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<210> 68
<211> 327
<212> PRT
<213> Arabidopsis thaliana
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Gly	Pro	Trp	Ser	Pro	Glu	Glu	Asp	Ile	Lys	Leu	Ile	Ser	Phe	Ile	Gln	
			20					25					30			
Lys	Phe	Gly	His	Glu	Asn	Trp	Arg	Ser	Leu	Pro	Lys	Gln	Ser	Gly	Met	
		35					40					45				
Ser	Leu	Leu	Leu	Ser	Ser	Gln	Ser	Lys	Gln	Lys	Pro	Leu	Gln	Leu	Phe	
	50					55					60					
Phe	Leu	Phe	Phe	Met	Ile	Leu	Asn	Val	Tyr	Ile	Cys	Lys	Asn	Glu	Gly	
65					70					75					80	
Leu	Leu	Arg	Cys	Gly	Lys	Ser	Cys	Arg	Leu	Arg	Trp	Ile	Asn	Tyr	Leu	
			85						90					95		
Arg	Pro	Asp	Leu	Lys	Arg	Gly	Asn	Phe	Thr	Ser	Glu	Glu	Glu	Glu	Thr	
			100					105					110			
Ile	Ile	Lys	Leu	His	His	Asn	Tyr	Gly	Asn	Lys	Trp	Ser	Lys	Ile	Ala	
		115					120					125				
Ser	Gln	Leu	Pro	Gly	Arg	Thr	Asp	Asn	Glu	Ile	Lys	Asn	Val	Trp	His	
	130					135					140					
Thr	His	Leu	Lys	Lys	Arg	Leu	Ala	Gln	Ser	Ser	Gly	Thr	Ala	Asp	Glu	
145					150					155					160	
Pro	Ala	Ser	Pro	Cys	Ser	Ser	Asp	Ser	Val	Ser	Arg	Gly	Lys	Asp	Asp	
				165					170					175		
Lys	Ser	Ser	His	Val	Glu	Asp	Ser	Leu	Asn	Arg	Glu	Thr	Asn	His	Arg	
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<211> 826
<212> DNA
<213> Arabidopsis thaliana

<220>
<223> G620

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cgtgagcaag accaatcacat gccaatcgca aacgctcataa gaatcatgcg taaaacctta 180
ccgtctcagct ccaaaatctc tgacgacgcc aaagaaacga tccaagaatgt tgtctccgag 240
tacatcacgt tctgtgaccg ttgaagccaac gagcgtgtcc aacgtgagca acgtaaagacc 300
ataactcagct aagatatcct ttgggtctat agcaagctgt ggttcgatata ctactgtggac 360
ccctcacgcg tgttctataa ccggtaccgt gagatagaga ccgatcgctgg ttctgcaact 420
agaggtgagc caccgtctgt gagacaaacc tatggaggaa atggtattgg gtttcacggc 480
acactctact gectactcct tccgggtcct tatgtgttat gtatgttga ccaattccat 540
gttatgggag ttggtcggtt ctaccaaacc gggctgctgg gtcaagatga atccagtggt 600
gggtggtggct cttcgctctc cattaaacgga atgcggcgtt ttgaccatta ttggtcagtat 660
aagtgaagaa ggaagtattc ttcatcttta tatctattca aaacatgtgt ttcgatagat 720
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<210> 70
<211> 208
<212> PRT
<213> Arabidopsis thaliana
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&lt;223&gt; G620

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Ile Val Val Gln Gln Gln Pro Pro Cys Val Ala Arg Glu Gln Asp Gln  
20 25 30

Tyr Met Pro Ile Ala Asn Val Ile Arg Ile Met Arg Lys Thr Leu Pro  
35 40 45

Ser His Ala Lys Ile Ser Asp Asp Ala Lys Glu Thr Ile Gln Glu Cys  
50 55 60

Val Ser Glu Tyr Ile Ser Phe Val Thr Gly Glu Ala Asn Glu Arg Cys  
65 70 75 80

Gln Arg Glu Gln Arg Lys Thr Ile Thr Ala Glu Asp Ile Leu Trp Ala  
85 90 95

Met Ser Lys Leu Gly Phe Asp Asn Tyr Val Asp Pro Leu Thr Val Phe  
100 105 110

Ile Asn Arg Tyr Arg Glu Ile Glu Thr Asp Arg Gly Ser Ala Leu Arg  
115 120 125

Gly Glu Pro Pro Ser Leu Arg Gln Thr Tyr Gly Gly Asn Gly Ile Gly  
130 135 140

Phe His Gly Pro Ser His Gly Leu Pro Pro Pro Gly Pro Tyr Gly Tyr  
145 150 155 160

Gly Met Leu Asp Gln Ser Met Val Met Gly Gly Gly Arg Tyr Tyr Gln  
165 170 175

Asn Gly Ser Ser Gly Gln Asp Glu Ser Ser Val Gly Gly Gly Ser Ser  
180 185 190

Ser Ser Ile Asn Gly Met Pro Ala Phe Asp His Tyr Gly Gln Tyr Lys  
195 200 205

<211> 1394

<213> Aral

<220>

&lt;223&gt; G596

&lt;400&gt; 71

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atttaggggt	caattgttga	cttttgggtt	gcttttataa	taaggaatag	gatacaggtct	180
ctcgctctct	tctctcacct	ttttctctaa	gatagctcca	cttttacacca	caccatacaat	240
tccagcatca	cqaacgaacq	caaccaacaa	acacacccca	cqatataccc	cagaccacaa	300

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<210> 72
<211> 317
<212> PRT
<213> Arabidopsis thaliana

<220>
<223> G596

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Leu His His Leu His Pro His His Gln Phe Gln His Gln Gln Gln Gln
 20              25              30
Gln Gln Asn His Gly His Asp Ile Asp Gln His Arg Ile Gly Gly Leu
 35              40              45
Lys Arg Asp Asp Arg Ala Asp Ile Asp Pro Asn Glu His Ser Ser Ala
 50              55              60
Gly Lys Asp Gln Ser Thr Pro Gly Ser Gly Gly Glu Ser Gly Gly Gly
 65              70              75              80
Gly Gly Gly Asp Asn His Ile Thr Arg Arg Pro Arg Gly Arg Pro Ala
 85              90              95
Gly Ser Lys Asn Lys Pro Lys Pro Pro Ile Ile Ile Thr Arg Asp Ser
 100             105             110
Ala Asn Ala Leu Lys Ser His Val Met Glu Val Ala Asn Gly Cys Asp
 115             120             125
Val Met Glu Ser Val Thr Val Phe Ala Arg Arg Arg Gln Arg Gly Ile
 130             135             140

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Cys Val Leu Ser Gly Asn Gly Ala Val Thr Asn Val Thr Ile Arg Gln  
145 150 155 160

Pro Ala Ser Val Pro Gly Gly Gly Ser Ser Val Val Asn Leu His Gly  
165 170 175

Arg Phe Glu Ile Leu Ser Leu Ser Gly Ser Phe Leu Pro Pro Ala  
180 185 190

Pro Pro Ala Ala Ser Gly Leu Thr Ile Tyr Leu Ala Gly Gln Gly  
195 200 205

Gln Val Val Gly Gly Ser Val Val Gly Pro Leu Met Ala Ser Gly Pro  
210 215 220

Val Val Ile Met Ala Ala Ser Phe Gly Asn Ala Ala Tyr Glu Arg Leu  
225 230 235 240

Pro Leu Glu Glu Asp Asn Gln Glu Glu Gln Thr Ala Gly Ala Val Ala  
245 250 255

Asn Asn Ile Asp Gly Asn Ala Thr Met Gly Gly Gly Thr Gln Thr Gln  
260 265 270

Thr Gln Thr Gln Gln Gln Gln Gln Gln Gln Leu Met Gln Asp Pro Thr  
275 280 285

Ser Phe Ile Gln Gly Leu Pro Pro Asn Leu Met Asn Ser Val Gln Leu  
290 295 300

Pro Ala Glu Ala Tyr Trp Gly Thr Pro Arg Pro Ser Phe  
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<211> 913

<212> DNA

<213> *Arabidopsis thaliana*

<220>

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<400> 73

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agtgatgact caatgcacgc tgcattcccc gtacttgacg tctttgaggt cgagcctagt 180
catcttccaa atgttgctgg agtgagatgt cgaggagacg ctgagcaatg gttcttcttc 240
gtgccacgac aagaacgcga agcaagagga ggcagaccga gtagaactac tgggttcagga 300
tactggaaaag caactggatc acctgggtcca gtcttttcca aagacaacaa aatgattgga 360
gcaaagaaaa ctatggtttt ctacactgga aaagcaccca caggaagaaa aactaaatgg 420
aaaaatgaatg agtaccacgc cgttgacgaa acagtcaacg cttccacaat ccctaagctg 480
agacgtgagt tcagtttatg tcgagctctac ataacaacag gaagctccag agcttttgat 540
agacgtcctg agggagtttt gcagacagag agaattgctaa caagtgtgtg tcagtagact 600
gagacatcgt tccgtgtgga aagctcactg gaaacttcga tttcaggagg agaacatatt 660
gatgtctcta tgaacacaga gtttgttgat ggactatcag aaccgatgtg ggaactggaa 720
cagctgactt ggccttgaag ctatatagat tttataatca agcaaattta aactgttttc 780
aattgtctat tgttagtttg aattttatga cccgaaagat tctttttctt tctttacctt 840
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<220>  
<223> G511

**Figure 1** Schematic representation of the experimental design. The subjects were divided into two groups: the control group (CG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG).

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 <212> DNA  
 <213> *Arabidopsis thaliana*

<220>  
 <223> G471

<400> 75  
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 gcttccaatc attcatctgg taaacctgga ggagttttta gtgatgcttt atgtaggagg 180  
 ctctggcatg cctgtgctgg accctcttgta accctacctc gtgaaggaggga acgagtttat 240  
 tatttccctg aaggccacat ggagcagctc gaggcaccaa tgcaccaagg tttggagcaa 300  
 cagatgcctt ccttcaacct cccatctaag atcctctgta aagttatcaa catccagcgc 360  
 agggcagacc ccgagactga cgaagtatat gcgcaataaa ccttattgcc agaactggat 420  
 caaagcgaac ccactagccc agatgcccct gttcaagaac ctgaaaaagtg caccgtacat 480  
 tcatttttga agacactaac tgcttcagac acaagcacac atgggtggctt ctcggtgcta 540  
 cggagacatg cagatgattg tctcccaccc ttggatatgt cccaacaacc accgtggcaa 600  
 gaattgggtg caactgattt gcacaatagt gaatggcatt ttaggcacat ttccgaggcg 660  
 caaccaagtg gtcatttgct aacaactgga tggagtgttt ttgttagctc gaagaaacta 720  
 gtggctgggt atgctttcat attcttaagg ggtgagaatg aagagctcgc agtaggtgtt 780  
 agggcgacac tgagacaaca gactaatatc ccgtcatctg tcatctcaag tcatagcatg 840  
 catattgggg tccttgcaac agcagctcat gccattacaa caggaaacat cttttctgtc 900  
 ttttcaaggc caaggacaag taggtcagag tttattgtga cgcgtcaatag gtatctcgaa 960  
 gcttaagacc aagaagctgc gttaggcctg cgtttcaaga tgagattcga gggggaagaa 1020  
 gctcccgaga aaagggttcag tggcacaata gttggtgttc agggaaaataa gtcttcggtc 1080  
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 aacaaatcat ttggagtatc tattggatca gccctttggc ccaccaatg agatagtcca 1440  
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 aatgtctgta ggctttttgg ttttagccta gttgaaaatg ttaatgtgga tgaatgttc 1560  
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 gaagtgttat gcttcaagt cttatgaatt cacttagatg caatgtgttt tgaggagttg 2280  
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 <213> *Arabidopsis thaliana*

<220>  
 <223> G471

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		20						25						30		
Thr	Leu	Pro	Arg	Glu	Gly	Glu	Arg	Val	Tyr	Tyr	Phe	Pro	Glu	Gly	His	
		35					40					45				
Met	Glu	Gln	Leu	Glu	Ala	Ser	Met	His	Gln	Gly	Leu	Glu	Gln	Gln	Met	
	50					55					60					
Pro	Ser	Phe	Asn	Leu	Pro	Ser	Lys	Ile	Leu	Cys	Lys	Val	Ile	Asn	Ile	
	65				70					75					80	
Gln	Arg	Arg	Ala	Glu	Pro	Glu	Thr	Asp	Glu	Val	Tyr	Ala	Gln	Ile	Thr	
				85					90					95		
Leu	Leu	Pro	Glu	Leu	Asp	Gln	Ser	Glu	Pro	Thr	Ser	Pro	Asp	Ala	Pro	
		100						105					110			
Val	Gln	Glu	Pro	Glu	Lys	Cys	Thr	Val	His	Ser	Phe	Cys	Lys	Thr	Leu	
	115						120					125				
Thr	Ala	Ser	Asp	Thr	Ser	Thr	His	Gly	Gly	Phe	Ser	Val	Leu	Arg	Arg	
	130					135					140					
His	Ala	Asp	Asp	Cys	Leu	Pro	Pro	Leu	Asp	Met	Ser	Gln	Gln	Pro	Pro	
	145				150					155				160		
Trp	Gln	Glu	Leu	Val	Ala	Thr	Asp	Leu	His	Asn	Ser	Glu	Trp	His	Phe	
				165				170						175		
Arg	His	Ile	Phe	Arg	Gly	Gln	Pro	Arg	Arg	His	Leu	Leu	Thr	Thr	Gly	
			180					185					190			
Trp	Ser	Val	Phe	Val	Ser	Ser	Lys	Lys	Leu	Val	Ala	Gly	Asp	Ala	Phe	
		195					200					205				
Ile	Phe	Leu	Arg	Gly	Glu	Asn	Glu	Glu	Leu	Arg	Val	Gly	Val	Arg	Arg	
	210					215					220					
His	Met	Arg	Gln	Gln	Thr	Asn	Ile	Pro	Ser	Ser	Val	Ile	Ser	Ser	His	
	225				230					235					240	
Ser	Met	His	Ile	Gly	Val	Leu	Ala	Thr	Ala	Ala	His	Ala	Ile	Thr	Thr	
				245					250					255		
Gly	Thr	Ile	Phe	Ser	Val	Phe	Tyr	Lys	Pro	Arg	Thr	Ser	Arg	Ser	Glu	
			260					265					270			
Phe	Ile	Val	Ser	Val	Asn	Arg	Tyr	Leu	Glu	Ala	Lys	Thr	Gln	Lys	Leu	
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Ser	Val	Trp	His	Asp	Ser	Glu	Trp	Arg	Ser	Leu	Lys	Val	Gln	Trp	Asp
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Thr	Phe	Gly	His	Gly	Gly	Asn	Lys	Ser	Phe	Gly	Val	Ser	Ile	Gly	Ser
				420					425					430	
Ala	Phe	Trp	Pro	Thr	Asn	Ala	Asp	Ser	Ala	Ala	Glu	Ser	Phe	Ala	Ser
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Ala	Phe	Asn	Asn	Glu	Ser	Thr	Glu	Lys	Lys	Gln	Thr	Asn	Gly	Asn	Val
				450							460				
Cys	Arg	Leu	Phe	Gly	Phe	Glu	Leu	Val	Glu	Asn	Val	Asn	Val	Asp	Glu
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Cys	Phe	Ser	Ala	Ala	Ser	Val	Ser	Gly	Ala	Val	Ala	Val	Asp	Gln	Pro
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Val	Pro	Ser	Asn	Glu	Phe	Asp	Ser	Gly	Gln	Gln	Ser	Glu	Pro	Leu	Asn
				500					505					510	
Ile	Asn	Gln	Ser	Asp	Ile	Pro	Ser	Gly	Ser	Gly	Asp	Pro	Glu	Lys	Ser
									520				525		
Ser	Leu	Arg	Ser	Pro	Gln	Glu	Ser	Gln	Ser	Arg	Gln	Ile	Arg	Ser	Cys
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Thr	Lys	Val	His	Met	Gln	Gly	Ser	Ala	Val	Gly	Arg	Ala	Ile	Asp	Leu
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Thr	Arg	Ser	Glu	Cys	Tyr	Glu	Asp	Leu	Phe	Lys	Lys	Leu	Glu	Glu	Met
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Phe	Asp	Ile	Lys	Gly	Glu	Leu	Leu	Glu	Ser	Thr	Lys	Lys	Trp	Gln	Val
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Val	Tyr	Thr	Asp	Asp	Glu	Asp	Asp	Met	Met	Met	Val	Gly	Asp	Asp	Pro
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 35 40 45  
 Gln Glu Gly Gly Ser Gly Asn Asp Gln Asp Pro Leu His Pro Asn Lys  
 50 55 60  
 Lys Lys Arg Tyr His Arg His Thr Gln Leu Gln Ile Gln Glu Met Glu  
 65 70 75 80  
 Ala Phe Phe Lys Glu Cys Pro His Pro Asp Lys Gln Arg Lys Gln  
 85 90 95  
 Leu Ser Arg Glu Leu Asn Leu Glu Pro Leu Gln Val Lys Phe Trp Phe  
 100 105 110  
 Gln Asn Lys Arg Thr Gln Met Lys Asn His His Glu Arg His Glu Asn  
 115 120 125  
 Ser His Leu Arg Ala Glu Asn Glu Lys Leu Arg Asn Asp Asn Leu Arg  
 130 135 140  
 Tyr Arg Glu Ala Leu Ala Asn Ala Ser Cys Pro Asn Cys Gly Gly Pro  
 145 150 155 160  
 Thr Ala Ile Gly Glu Met Ser Phe Asp Glu His Gln Leu Arg Leu Glu  
 165 170 175  
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 180 185 190  
 Lys Tyr Val Gly Lys Pro Val Ser Asn Tyr Pro Leu Met Ser Pro Pro  
 195 200 205  
 Pro Leu Pro Pro Arg Pro Leu Glu Leu Ala Met Gly Asn Ile Gly Gly  
 210 215 220  
 Glu Ala Tyr Gly Asn Asn Pro Asn Asp Leu Leu Lys Ser Ile Thr Ala  
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005000 022000

Pro	Thr	Glu	Ser	Asp	Lys	Pro	Val	Ile	Ile	Asp	Leu	Ser	Val	Ala	Ala
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Met	Glu	Glu	Leu	Met	Arg	Met	Val	Gln	Val	Asp	Glu	Pro	Leu	Trp	Lys
			260					265					270		
Ser	Leu	Ala	Leu	Asp	Glu	Glu	Glu	Tyr	Ala	Arg	Thr	Phe	Pro	Arg	Gly
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Ile	Gly	Pro	Arg	Pro	Ala	Gly	Tyr	Arg	Ser	Glu	Ala	Ser	Arg	Glu	Ser
	290					295					300				
Ala	Val	Val	Ile	Met	Asn	His	Val	Asn	Ile	Val	Glu	Ile	Leu	Met	Asp
305					310					315					320
Val	Asn	Gln	Trp	Ser	Thr	Ile	Phe	Ala	Gly	Met	Val	Ser	Arg	Ala	Met
				325					330					335	
Thr	Leu	Ala	Val	Leu	Ser	Thr	Gly	Val	Ala	Gly	Asn	Tyr	Asn	Gly	Ala
		340						345					350		
Leu	Gln	Val	Met	Ser	Ala	Glu	Phe	Gln	Val	Pro	Ser	Pro	Leu	Val	Pro
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Thr	Arg	Glu	Thr	Tyr	Phe	Ala	Arg	Tyr	Cys	Lys	Gln	Gln	Gly	Asp	Gly
	370				375						380				
Ser	Trp	Ala	Val	Val	Asp	Ile	Ser	Leu	Asp	Ser	Leu	Gln	Pro	Asn	Pro
385					390					395					400
Pro	Ala	Arg	Cys	Arg	Arg	Arg	Ala	Ser	Gly	Cys	Leu	Ile	Gln	Glu	Leu
				405					410					415	
Pro	Asn	Gly	Tyr	Ser	Lys	Val	Thr	Trp	Val	Glu	His	Val	Glu	Val	Asp
			420					425					430		
Asp	Arg	Gly	Val	His	Asn	Leu	Tyr	Lys	His	Met	Val	Ser	Thr	Gly	His
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Ala	Phe	Gly	Ala	Lys	Arg	Trp	Val	Ala	Ile	Leu	Asp	Arg	Gln	Cys	Glu
	450				455					460					
Arg	Leu	Ala	Ser	Val	Met	Ala	Thr	Asn	Ile	Ser	Ser	Gly	Glu	Val	Gly
465					470					475					480
Val	Ile	Thr	Asn	Gln	Glu	Gly	Arg	Arg	Ser	Met	Leu	Lys	Leu	Ala	Glu
			485					490					495		
Arg	Met	Val	Ile	Ser	Phe	Cys	Ala	Gly	Val	Ser	Ala	Ser	Thr	Ala	His
			500					505					510		
Thr	Trp	Thr	Thr	Leu	Ser	Gly	Thr	Gly	Ala	Glu	Asp	Val	Arg	Val	Met
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[illegible]



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Leu Thr Lys Thr Tyr Glu Met Val Asp Asp Ser Ser Ser Asp Ser Ile
          20              25              30

Val Ser Trp Ser Gln Ser Asn Lys Ser Phe Ile Val Trp Asn Pro Pro
          35              40              45

Glu Phe Ser Arg Asp Leu Leu Pro Arg Phe Phe Lys His Asn Asn Phe
          50              55              60

Ser Ser Phe Ile Arg Gln Leu Asn Thr Tyr Gly Phe Arg Lys Ala Asp
          65              70              75              80

Pro Glu Gln Trp Glu Phe Ala Asn Asp Asp Phe Val Arg Gly Gln Pro
          85              90              95

His Leu Met Lys Asn Ile His Arg Arg Lys Pro Val His Ser His Ser
          100             105             110

Leu Pro Asn Leu Gln Ala Gln Leu Asn Pro Leu Thr Asp Ser Glu Arg
          115             120             125

Val Arg Met Asn Asn Gln Ile Glu Arg Leu Thr Lys Glu Lys Glu Gly
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			20					25					30				
Pro	Val	Ser	Val	Ser	Glu	Glu	Arg	Asp	Gly	Lys	Arg	Glu	Arg	Lys	Asn		
		35					40					45					
Leu	Tyr	Arg	Gly	Ile	Arg	Gln	Arg	Pro	Trp	Gly	Lys	Trp	Ala	Ala	Glu		
50						55					60						
Ile	Arg	Asp	Pro	Ser	Lys	Gly	Val	Arg	Val	Trp	Leu	Gly	Thr	Phe	Lys		
65					70					75					80		
Thr	Ala	Asp	Glu	Ala	Ala	Arg	Ala	Tyr	Asp	Val	Ala	Ala	Ile	Lys	Ile		
				85					90					95			
Arg	Gly	Arg	Lys	Ala	Lys	Leu	Asn	Phe	Pro	Asn	Thr	Gln	Val	Glu	Glu		
			100					105					110				
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		115					120					125					
Asn	Gln	Val	Glu	Ser	Leu	Ser	Glu	Asp	Leu	Met	Ala	Leu	Glu	Asp	Tyr		
		130				135					140						
Met	Arg	Phe	Tyr	Gln	Ile	Pro	Val	Ala	Asp	Asp	Gln	Ser	Ala	Thr	Asp		
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[illegible]

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Figure 1. The structure of the proposed model.

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35 40 45

Ala Ser Leu Ala Gly Lys Leu Leu Glu Glu Ser Glu Ser Ser Ser Thr  
50 55 60

Ser Thr Tyr Ala Ser Glu Ala Asp Asn Leu Asp His Leu Gly Gly Leu  
65 70 75 80

Ile Lys Gln Glu Leu Glu Asp Gly Tyr Thr Thr Lys Pro Cys Lys Ser  
85 90 95

Glu Phe Phe Asp Pro Gly Asn Pro Ala Ser Lys Ser Thr Ser Glu Asn  
100 105 110

Thr Ser Val Thr Cys Leu Pro Phe Ser Ser Phe Glu Asn Asp Cys Ile  
115 120 125

Leu Glu Gln Thr Pro Val Ser Asp Cys Lys Arg Ala Ser Gly Leu Lys  
130 135 140

Ser Leu Val Gly Ser Ile Thr Glu Glu Thr Cys Val Val Asn Glu Asp  
145 150 155 160

Ala Gly Ser Glu Gln Gly Ala Asn Thr Phe Ser Leu Lys Asp Pro Ser  
165 170 175

Gln Leu His Ser Gln Ser Pro Glu Ser Val Leu Leu Asp Gly Asp Val  
180 185 190

Lys Leu Ala Pro Cys Thr Asp Gln Val Pro Asn Asp Ser Phe Lys Gly  
195 200 205

Tyr Arg Asn His Ser Lys Leu Val Cys Arg Asp Asp Asp Glu Asn Tyr  
210 215 220

Cys Lys Tyr Tyr Lys Phe Ser Asp Lys Cys Lys Ser Tyr Arg Pro Leu  
225 230 235 240

Ser Arg Val Gly Asn Arg Arg Ile Met Gln Ser Val Arg Ala Ile Ser  
245 250 255

Lys Leu Lys Cys Phe Glu Asp Thr Arg Thr Asp Gly Arg Leu Lys Ala  
260 265 270

Leu Tyr Arg Lys Arg Lys Leu Cys Tyr Gly Tyr Asn Pro Trp Lys Arg  
275 280 285

Glu	Thr	Ile	His	Arg	Lys	Arg	Arg	Leu	Ser	Asp	Lys	Gly	Leu	Val	Val
290					295					300					
Asn	Tyr	Asp	Gly	Gly	Leu	Ser	Ser	Glu	Ser	Val	Ser	Asn	Ser	Pro	Glu
305					310					315				320	
Lys	Gly	Glu	Ser	Glu	Asn	Gly	Asp	Phe	Ser	Ala	Ala	Lys	Ile	Gly	Leu
				325				330						335	
Leu	Ser	Lys	Asp	Ser	Arg	Val	Lys	Phe	Ser	Ile	Lys	Ser	Leu	Arg	Ile
			340					345					350		
Pro	Glu	Leu	Val	Ile	Glu	Val	Pro	Glu	Thr	Ala	Thr	Val	Gly	Leu	Leu
			355				360						365		
Lys	Arg	Thr	Val	Lys	Glu	Ala	Val	Thr	Ala	Leu	Leu	Gly	Gly	Gly	Ile
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Arg	Ile	Gly	Val	Leu	Val	Gln	Gly	Lys	Lys	Val	Arg	Asp	Asp	Asn	Asn
385					390					395				400	
Thr	Leu	Ser	Gln	Thr	Gly	Leu	Ser	Cys	Arg	Glu	Asn	Leu	Gly	Asn	Leu
			405					410						415	
Gly	Phe	Thr	Leu	Glu	Pro	Gly	Leu	Glu	Thr	Leu	Pro	Val	Pro	Leu	Cys
			420					425					430		
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			435				440					445			
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			450			455					460				
Pro	Gln	Asp	Glu	Asp	Tyr	Leu	Ile	Asn	Leu	Gly	Asn	Ser	Val	Glu	Asn
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				565				570						575	
Leu	Lys	Asp	Lys	Trp	Lys	Thr	Leu	Val	His	Thr	Ala	Ser	Ile	Ser	Pro
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<213> *Arabidopsis thaliana*

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Asp Gln Ala Ala Ser Thr Ser Ser His Asn Val Phe Cys Thr Gln Asp  
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Arg Ile Ser Thr Asn Gly Ser 55 Glu Phe Arg Phe 60 Pro Val Ser Leu Ser
Gly Ile Arg Asp Arg Glu 70 Asp Glu Asp Phe Ser 75 Ser Gly Val Ala Gly
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Glu Glu Gln Asp Asp Arg Thr Asp Val Asn Thr Gly Leu Asn Leu Arg  
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Phe	Phe	Arg	Pro	Lys	Glu	Asn	Lys	Tyr	Gly	Arg	Gly	Asp	Gln	Gln	Met	
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Asp Ile Asp Asp Ala Lys Glu Lys Ser Ile Met Phe Met His Asp Asn  
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Arg Ser Asp Tyr Arg Pro Pro Asn Ser Leu Thr Gly Val Phe Ser Asp  
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His Arg Ile Asp Gln Ile Lys Asp Leu Gln Glu Ser Pro Thr Ser Thr  
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005500-00000

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&lt;210&gt; 102

&lt;211&gt; 841

&lt;212&gt; PRT

<213> *Arabidopsis thaliana*

&lt;220&gt;

&lt;223&gt; G390

&lt;400&gt; 102

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Phe Asp Ser Gly Lys Tyr Val Arg Tyr Thr Pro Glu Gln Val Glu Ala
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Leu Glu Arg Val Tyr Ala Glu Cys Pro Lys Pro Ser Ser Leu Arg Arg
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Gln Gln Leu Ile Arg Glu Cys Pro Ile Leu Cys Asn Ile Glu Pro Arg
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Gln Ile Lys Val Trp Phe Gln Asn Arg Arg Cys Arg Glu Lys Gln Arg
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```

Lys Glu Ser Ala Arg Leu Gln Thr Val Asn Arg Lys Leu Ser Ala Met
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Asn Lys Leu Leu Met Glu Glu Asn Asp Arg Leu Gln Lys Gln Val Ser
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Asn Leu Val Tyr Glu Asn Gly Phe Met Lys His Arg Ile His Thr Ala
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 Glu Phe Leu Cys Lys Ala Thr Gly Thr Ala Val Asp Trp Val Gln Met  
 180 185 190  
 Ile Gly Met Lys Pro Gly Pro Asp Ser Ile Gly Ile Val Ala Val Ser  
 195 200 205  
 Arg Asn Cys Ser Gly Ile Ala Ala Arg Ala Cys Gly Leu Val Ser Leu  
 210 215 220  
 Glu Pro Met Lys Val Ala Glu Ile Leu Lys Asp Arg Pro Ser Trp Phe  
 225 230 235 240  
 Arg Asp Cys Arg Cys Val Glu Thr Leu Asn Val Ile Pro Thr Gly Asn  
 245 250 255  
 Gly Gly Thr Ile Glu Leu Val Asn Thr Gln Ile Tyr Ala Pro Thr Thr  
 260 265 270  
 Leu Ala Ala Ala Arg Asp Phe Trp Thr Leu Arg Tyr Ser Thr Ser Leu  
 275 280 285  
 Glu Asp Gly Ser Tyr Val Val Cys Glu Arg Ser Leu Thr Ser Ala Thr  
 290 295 300  
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 Ile His Ile Val Asp His Val Asp Leu Asp Val Ser Ser Val Pro Glu  
 340 345 350  
 Val Leu Arg Pro Leu Tyr Glu Ser Ser Lys Ile Leu Ala Gln Lys Met  
 355 360 365  
 Thr Val Ala Ala Leu Arg His Val Arg Gln Ile Ala Gln Glu Thr Ser  
 370 375 380  
 Gly Glu Val Gln Tyr Ser Gly Gly Arg Gln Pro Ala Val Leu Arg Thr  
 385 390 395 400  
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 405 410 415  
 Val Asp Asp Gly Trp Ser Pro Met Ser Ser Asp Gly Gly Glu Asp Ile  
 420 425 430

0553029-032200

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Ala	Ser	Met	Leu	Leu	Gln	Asn	Val	Pro	Pro	Leu	Val	Leu	Ile	Arg	Phe
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Leu	Arg	Glu	His	Arg	Ala	Glu	Trp	Ala	Asp	Tyr	Gly	Val	Asp	Ala	Tyr
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Ser	Ala	Ala	Ser	Leu	Arg	Ala	Thr	Pro	Tyr	Ala	Val	Pro	Cys	Val	Arg
			500					505					510		
Thr	Gly	Gly	Phe	Pro	Ser	Asn	Gln	Val	Ile	Leu	Pro	Leu	Ala	Gln	Thr
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Leu	Glu	His	Glu	Glu	Phe	Leu	Glu	Val	Val	Arg	Leu	Gly	Gly	His	Ala
	530					535					540				
Tyr	Ser	Pro	Glu	Asp	Met	Gly	Leu	Ser	Arg	Asp	Met	Tyr	Leu	Leu	Gln
	545				550					555					560
Leu	Cys	Ser	Gly	Val	Asp	Glu	Asn	Val	Val	Gly	Gly	Cys	Ala	Gln	Leu
				565					570					575	
Val	Phe	Ala	Pro	Ile	Asp	Glu	Ser	Phe	Ala	Asp	Asp	Ala	Pro	Leu	Leu
			580					585					590		
Pro	Ser	Gly	Phe	Arg	Val	Ile	Pro	Leu	Asp	Gln	Lys	Thr	Asn	Pro	Asn
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Asp	His	Gln	Ser	Ala	Ser	Arg	Thr	Arg	Asp	Leu	Ala	Ser	Ser	Leu	Asp
	610					615					620				
Gly	Ser	Thr	Lys	Thr	Asp	Ser	Glu	Thr	Asn	Ser	Arg	Leu	Val	Leu	Thr
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Ile	Ala	Phe	Gln	Phe	Thr	Phe	Asp	Asn	His	Ser	Arg	Asp	Asn	Val	Ala
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Thr	Met	Ala	Arg	Gln	Tyr	Val	Arg	Asn	Val	Val	Gly	Ser	Ile	Gln	Arg
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Val	Ala	Leu	Ala	Ile	Thr	Pro	Arg	Pro	Gly	Ser	Met	Gln	Leu	Pro	Thr
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						695					700				
Ile	His	Thr	Gly	Ala	Asp	Leu	Phe	Gly	Ala	Asp	Ser	Gln	Ser	Cys	Gly
	705				710					715					720
Gly	Asp	Thr	Leu	Leu	Lys	Gln	Leu	Trp	Asp	His	Ser	Asp	Ala	Ile	Leu
				725					730					735	



Cys Cys Ser Leu Lys Thr Asn Ala Ser Pro Val Phe Thr Phe Ala Asn  
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Gln Ala Gly Leu Asp Met Leu Glu Thr Thr Leu Val Ala Leu Gln Asp  
 755 760 765

Ile Met Leu Asp Lys Thr Leu Asp Asp Ser Gly Arg Arg Ala Leu Cys  
 770 775 780

Ser Glu Phe Ala Lys Ile Met Gln Gln Gly Tyr Ala Asn Leu Pro Ala  
 785 790 795 800

Gly Ile Cys Val Ser Ser Met Gly Arg Pro Val Ser Tyr Glu Gln Ala  
 805 810 815

Thr Val Trp Lys Val Val Asp Asp Asn Glu Ser Asn His Cys Leu Ala  
 820 825 830

Phe Thr Leu Val Ser Trp Ser Phe Val  
 835 840

&lt;210&gt; 103

&lt;211&gt; 1771

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis thaliana

&lt;220&gt;

&lt;223&gt; G1034

&lt;400&gt; 103

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Leu	Phe	Asp	Asn	Asn	Leu	Asn	Pro	Val	Asp	Gly	Phe	Ser	Pro	Gln	Ser
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Phe	Asp	Arg	Asp	Tyr	Asn	Phe	Asn	Gly	Ser	Leu	Ser	Gly	Leu	Asn	Leu
	50					55					60				
Pro	Glu	Lys	Lys	Pro	Ile	Lys	Lys	Arg	Lys	Ser	Trp	Gly	Gln	Gln	Leu
					70					75					80
Pro	Glu	Pro	Lys	Thr	Asn	Leu	Pro	Pro	Arg	Lys	Arg	Ala	Lys	Thr	Gln
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Asp	Glu	Lys	Glu	Gln	Arg	Arg	Val	Glu	Arg	Val	Leu	Arg	Asn	Arg	Arg
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Cys Gln Ser Glu Leu Gly Gln Pro Trp Met Asn Ser Thr Tyr Leu Ser  
260 265 270

Leu Arg Thr Lys Ala Leu Lys Leu Ser Val Thr Tyr Leu Ile Thr Met  
275 280 285

Leu Thr Thr Phe Leu Ile Val Leu Gly Asn Leu Asn Gln Asn Ile Met  
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Phe Leu Met Thr Arg Phe Leu Leu Thr Pro Thr Tyr Phe Ile Gln Arg  
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Met Lys Ile Phe Gly Asp Arg Thr Thr Val Phe Ser Met Asn Leu Ser  
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340 345 350

Arg Ile Ser Leu Leu Gly Arg Arg Gln Ala Cys Ser Arg Asn Leu Ala  
355 360 365

Arg Ser Leu Met Asn Ala Thr Met Ala Ala Leu Arg Phe Glu Ser Lys  
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Gln Arg Leu Phe Arg Asn Phe Leu Ser Thr Val Ala Leu Gln Ile Ser  
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&lt;210&gt; 105

&lt;211&gt; 2910

&lt;212&gt; DNA

&lt;213&gt; Arabidopsis thaliana

&lt;220&gt;

&lt;223&gt; G1149

&lt;400&gt; 105

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00530209 032200

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<210> 106
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<212> PRT
<213> Arabidopsis thaliana

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<220>
<223> G1149

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<400> 106
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Gly Gly Gly Arg Arg Ser Asp Gln Arg Gln Asp Gln Ser Ser Gly Gln
  20             25             30

```

```

Val Ala Trp Pro Gly Leu Gln Gln Ser Tyr Gly Gly Gly Ser
  35             40             45

```

```

Val Ser Ala Gly Arg Gly Arg Gly Asn Val Gly Arg Gly Glu Asn Thr
  50             55             60

```

Gly Asp Leu Thr Ala Thr Gln Val Pro Val Ala Ser Ala Val Ser Gly  
 65 70 75 80  
 Gly Arg Gly Arg Gly Asn Ile Gly Asp Pro Thr Phe Ser Val Ala Ser  
 85 90 95  
 Ser Ser Lys Thr Val Ser Val Ala Ser Ser Ser Lys Glu Glu Ser Lys  
 100 105 110  
 Asn Thr Glu Val Ser Glu Thr Met Ser Asn Leu Gln Ile Thr Ser Thr  
 115 120 125  
 Glu Thr Lys Pro Glu Met Thr Ser Leu Pro Pro Ala Ser Ser Lys Ala  
 130 135 140  
 Val Thr Phe Pro Val Arg Pro Gly Arg Gly Thr Leu Gly Lys Lys Val  
 145 150 155 160  
 Met Val Arg Ala Asn His Phe Leu Val Gln Val Ala Asp Arg Asp Leu  
 165 170 175  
 Tyr His Tyr Asp Val Ser Ile Asn Pro Glu Val Ile Ser Lys Thr Val  
 180 185 190  
 Asn Arg Asn Val Met Lys Leu Leu Val Lys Asn Tyr Lys Asp Ser His  
 195 200 205  
 Leu Gly Gly Lys Ser Pro Ala Tyr Asp Gly Arg Lys Ser Leu Tyr Thr  
 210 215 220  
 Ala Gly Pro Leu Pro Phe Asp Ser Lys Glu Phe Val Val Asn Leu Ala  
 225 230 235 240  
 Glu Lys Arg Ala Asp Gly Ser Ser Gly Lys Asp Arg Pro Phe Lys Val  
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 260 265 270  
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